



## **ISSD      NEWSLETTER**

**Volume II   Number 6**

**November 1989**



# International Society for the Study of Dendrobatid Frogs

I S S D

A general statement of some of the goals and objectives of ISSD:

ISSD exists to:

: To encourage, stimulate, and wherever possible, facilitate scientific research as it relates to any and all aspects of the study of Dendrobatid frogs: including, but not limited to, ecological studies, toxicological studies, taxonomic studies, and studies concerned with husbandry and captive propagation.

: To unify those individuals who participate in these studies and to provide vehicles of communication for the dissemination of knowledge gained as a result of this research.

: To afford those individuals who participate in programs of captive propagation the opportunity to develop a breeders network to facilitate breeding loans and species trades.

: To assist those individuals who need, or desire, to communicate with foreign government agencies which control access to wild populations of Dendrobatids in countries where they exist naturally.

: To encourage uniformity in record keeping systems for captive propagation programs, as well as uniformity in methods of wild captured specimen disposition reporting.

: To encourage preservation of, and protection for, populations of threatened or endangered Dendrobatid species: while at the same time preserving opportunities for limited access to those populations by individuals with legitimate research interests.

: To encourage the establishment and maintenance of stable and genetically diverse captive populations of endangered or threatened species.



# Note from the Editor:



This edition of the newsletter brings Volume II to a close. The opening of a new volume with the next edition, Volume III number 1, provides a natural break in the flow of things and offers a good time for assessment of both the past and future of **ISSD**.

Where do we go from here? One crucial question we face, which concerns the future of the **ISSD** itself, is: what is going to happen to this newsletter? I had hoped to pass the pen to someone else for Volume III. So far there have been no takers for the job. Therefore, I will accept the position of Temporary Newsletter Editor until someone else steps forward to accept the editorship. I have enjoyed this job and have learned much while doing it. Also, I have made innumerable invaluable contacts with collectors all over the world in the course of my duties. This position is a wonderful opportunity for someone. If you are that "someone", please give me a call - soon!

Since its founding, some two and a half years ago, the **ISSD** has undergone a gradual evolution. Most of what we have seen could be described as progress. However, we are also seeing the gradual evolution of some problems which are common to small subspecialty

organizations in the first few years. Any small organization brings forth a small group of active participants. The majority of the membership, for one reason or another, prefer to take a passive role, this is normal. As the resources of the regular contributors become more and more taxed there is increasing difficulty finding new material. Herein lies the heart of the difficulties we have been experiencing with tardiness of publication of the newsletter in the last few editions. A newsletter cannot be published if there is no material to print. Responsibility for this problem is felt most acutely by the newsletter editor, but in reality the ultimate responsibility lies with you the members. If our newsletter dies - **ISSD** dies! We are at a crossroads. Therefore, I am issuing a call to service -we need material for the newsletter badly!

Beginning with January 1990 We are changing the way in which memberships are defined. In the past, memberships have been regarded as lasting for one year. During that time a member could expect to receive six newsletters. A membership will henceforth be considered to last for whatever period of time is required for the subscriber to receive six newsletters. This means that we will no longer promise to publish every other month. This, in my opinion, is a retreat, but it is one dictated



by the realities we face. We will not put out inadequate newsletters. When enough material is received to put forth an edition which is considered to be a valuable contribution, it will be done.

I have talked to many people who feel that they are too inexperienced to write knowledgeably or that their writing skills are not sharp enough. I must confess that when I began this editorship I had grave reservations about my own abilities. Necessity is the mother of invention; the limitations felt by most people are self imposed - give it a try and you may surprise yourself! I am more than willing to help refine a paper if there is a need for that.

I have also talked to many people who have told me that they will be sending me a paper as soon as they get time to get at it. The demands on my time are great, so I am not insensitive to this concern. Often I find that it takes me six months to get around to starting a paper that actually only takes a few hours to write. I have made a vow this year to do something about my propensity to procrastinate - as soon as I find the time! I would like all those people who have promised me papers to sit down this month and get going on them!

Personally I am quite satisfied that the **ISSD** has been a useful tool for keepers of Dendrobatid frogs. This newsletter is the only source of "nuts-n-bolts" information on the art of Dendrobatid terrarium keeping that is regularly published in English. I am very confident that it has done wonders to

promote the hobby in the U.S.. It would be a shame to see it fall by the wayside.

**DB**

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## **ISSD Officers - 1990**

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## Editor's Preface:

In the last edition of the **ISSD** Newsletter an article was published addressing the hotly debated issue of Dendrobatid nomenclature. It was anticipated at the time of publication that this paper would stir some controversy - and it has! I have received some rather strong "complaints" about its publication. It is not my practice to offer prefaces to papers, particularly when it is obvious that the preface itself may be an embarrassment to the paper's author. However, the controversy generated by this paper necessitates a clarification of the **ISSD's** position.

It is unfortunate that the paper dealing with Dendrobatid nomenclature published in the last edition was a synopsis of ideas rather than an original presentation of the rationale for a proposal of specific new scientific names. Most of our readers were probably not even aware that this classification system had been proposed. Sometimes when unfamiliar ideas are first encountered in the synopsis format, there is a tendency to jump to the conclusion that the original work has already undergone the critique process. As a result the work receives some unearned acceptance. I will have to admit that publication of a more basic presentation of these views would have been more appropriate. In the interest of fairness we are herein publishing a paper which deals specifically with the proposed name *Ranitomeya*.

Apparently it is the view of some members that this classification system was offered in our Newsletter as fact, rather than as opinion. A recurrent theme of the objections which have been raised is that publication of these views, in any forum, lends support to their claim of legitimacy and therefore the publication of these papers in the **ISSD** Newsletter was, and is, inappropriate. Before the following paper is presented, it is my duty to point out to our readers that this classification system has not been accepted by the scientific community. Some regard this classification system as "pure fantasy", complaining that it is not based on field study but rather is the result of review of existing publications only.

It is a well known fact that some individuals are able to publish their ideas and have them accepted as the gospel truth without question while others, with less famous names, find it difficult if not impossible to find a forum for their work. On the surface this seems somewhat unfair, however I should point out that the reputations of the "big names" in the field of herpetological taxonomy have been developed through many long hard years of painstaking work. Their publications have been subjected to close scrutiny. Those individuals who do their work well are accepted and with each successful publication the strength of their claim of expertise grows. As a result, each subsequent publication finds acceptance more easily than its predecessor. Those who would reject the ideas of the leaders in the field fight an uphill battle. To avoid the possibility of embarrassment they would do well to be sure that everything is in order before publishing their work. I submit to you that in the final analysis this is a good system, despite the fact that it is harsh to newcomers. What it does is ensure that only the cream rises to the top. Those views which come to be regarded as "fantasy" fall by the wayside. This is how the process works in this competitive field.



The ISSD Newsletter is not a scientific journal, nor has it ever aspired to that distinction. It is, as it states, a newsletter. Its purpose is to serve as a communication vehicle between the society members; to provide husbandry information, to promote interest in rain forest conservation issues, to promote the exchange of specimens for captive gene pool maintenance, and to stimulate interest in all aspects of the study of Dendrobatid frogs - including taxonomy. We do not take a position regarding the validity, or lack thereof, of any particular persons point of view. Most importantly, we do not censor views with which we do not agree because this is inconsistent with our stated goal of "stimulating interest". Sometimes stimulating interest is best accomplished by stirring controversy. We believe that this newsletter should be an open forum in which members, or even non-members, may feel free to discuss their ideas. It is the job of an author to write in a manner which compels the reader to accept his/her views. Similarly it is up to the reader to decide for himself/herself which ideas are valid and which are not. Publication of a paper in the newsletter does not constitute an endorsement of the author's views by the ISSD.

With these things in mind, we offer the following paper, it is up to you the reader to pass judgment on it. We suggest that your judgement be an informed one and therefore we encourage you to read as much as you can about this issue - if you do that then we will have succeeded in our goal of "stimulating interest".

## **SOME REMARKS ON DART-POISON FROGS** **and especially on the generic name RANITOMEYA**

by Luuc Bauer (Den Hague, Holland)

### **introduction:**

This is a slightly adapted and updated version of my article published in the spring of 1985, in which I described *RANITOMEYA* as new. Since that time further genera have been named and understanding of Dendrobatid relationships now seems to be fairly complete. Authors of names in Zoology should do their utmost to make their names as widely known as possible. Therefore I would like to present this short essay here for students of



## samenvatting:

Dit is een aangepaste en enigszins gemoderniseerde versie van mijn artikel uit voorjaar 1985 waarin de geslachtsnaam *RANITOMEYA* werd voorgesteld. Sedertdien zijn meer genera benoemd en langzamerhand ontstaat een afgerond beeld van de verwantschappen tussen pijlgifkikkers.

*RANITOMEYA* is een samentrekking (contaminatie) van het spaanse woord voor kikkertje *Ranita* en de eigennaam *Tomey*. Typesoort van dit geslacht is *Dendrobates reticulatus* Boulenger 1899. Vermoedelijk is dit een tamelijk primitieve vorm waarvan soorten met ei-etende larven afstammen.

Tot dit geslacht behoren de *reticulata* soortgroep, de *quinquevittata* soortgroep en vermoedelijk ook andere soorten met eigevoede dikkopjes.

## prelude:

In January of 1975 Studievereniging HET PALUDARIUM had been founded; Wim Tomey and I joined this study group devoted to the development of the paludarium and aquaterrarium as an agreeable combination with climatic conditions suitable for captive frogs.

Also in 1975, Silverstone's review of *Dendrobates* appeared and I translated that publication for internal use of study group members. When some years later Tomey asked me to find out the name of some little beauties he had found in Amazonian Peru - froglets locally known as *Ranitas rojas* because of their red colouration - that was not too difficult for me.

This form had been named as a separate species by Boulenger already in 1899. Silverstone lumped it as a specifically non-distinct form under *Dendrobates quinquevittatus*. Up to that time I took his conclusion of conspecificity for granted, but now my doubts arose: This species did not seem to be the same as *quinquevittatus*.

Although Silverstone mentioned *fantasticus* as an intermediate form between *quinquevittatus* and *reticulatus*, Wim Tomey, from a later expedition, showed the three different forms occurring in the same area. I concluded from



differences in lifestyle, and in size and colouration, as well as from the shared distribution that at least the red-backs were specifically distinct.

Now I am sorry to say that I had missed the resurrection of *reticulatus* by Myers and Daly, but am happy to have reached the same conclusion. *Dendrobates reticulatus* and *Dendrobates fantasticus* are distinct from the *quinquevittatus* complex.

## why a new genus?

In the following years some frogs of these species were kept and bred by frog-lovers in and around Den Hague. Slowly my interest was turned to the taxonomic situation. When my friend Tom Biesot made the observation that the anus of his tadpoles of *reticulatus* was dextral, I felt completely sure that *Dendrobates* as defined by Silverstone had to be split. A close review of the literature once again convinced me that his *Dendrobates* could not be a natural taxon. Tadpoles of this genus normally have their anus median; also the oral disc shows variable shapes. I could not accept the position that within one genus both a median and a dextral position of the anus was acceptable: Development, in my opinion, must be one of the clues to common ancestry. Moreover, the reproductive behavior of true *Dendrobates* and these species is different.

It must be admitted that this characteristic of anus position is not completely consistent in the tadpoles of *Phylllobates*. Finger discs and finger length, together with the absence of teeth in the adults, prompted Silverstone to place them in *Dendrobates*. It now is clear that these species deserve their own genus.

It is indeed a very good thing that, in his beautiful monographs, Silverstone listed all species with their discerning characteristics; a most valuable work, allowing others to agree or to start in different directions. Information which became available, and continues to do so, through the efforts of vivarists keeping Dart-Poison Frogs in captivity, supplemented the knowledge further.

*Dendrobates* sensu Silverstone with variations in Karyotype, variability of tadpole morphological types, and differences in reproductive behavior



certainly is paraphyletic. *Phyllobates* sensu Silverstone has been greatly affected by the restriction to only five species by Myers cs, which action once again lumped *Dendrobates* full with still more poorly related species. Within *Dendrobates* sensu Silverstone problems are raised by species of his *minutus*-group; however, differences between his *minutus* -group and his *quinquevittatus* -group are sufficient to place them both fairly apart.

For the forms in this species group I proposed the name *RANITOMEYA*.

## etymology:

The spanish word *Ranita* (little frog) combined with *Tomey* makes *Rani-tomey-a*. It is a pleasure to name the little red-backs after collector Wim A. Tomey, who has a keen interest in nature and a great concern over the serious decline of natural habitats caused by the advances of the civilization of western man.

## type species:

*Dendrobates reticulatus* Boulenger 1899 was the first of the *Ranitas* (little frogs) collected by Wim Tomey in Eastern Peru. Also it was this form that prompted me to reconsider my opinion, which heretofore had been based upon the work of Silverstone. It seems but logical therefore to designate this as the type species.

*Ranitomeya* may be near the base of *Dendrobatid* radiation from which the one egg-feeding lineage and the other carnivorous lineage have developed.

## species enclosed:

When publishing this name I felt some ambiguity as to the two groups I considered most closely related to the *Ranitomeya*. Therefore I included *Dendrobates opisthomelas*, *D. granuliferus*, *D. fantasticus*. My doubts concerning *Dendrobates minutus* and *D. quinquevittatus* were



expressly mentioned. In a supplement I will reconsider the contents and the generic definition.

## published definition:

- Adults:** skull bones not fused dorsally (re Silverstone *Dendrobates*); size very small, often less than 25 mm; color bright, often red.
- Tadpoles:** anus dextral (or caudal fin bending leftward along an almost median placed anus); spiracle low sinistral; oral disc indented.
- Arbitrary traits:** finger discs relatively large compared to finger size; first finger shorter than, or equal to, second finger.

The arbitrary traits raise the question of accurately measuring amphibians and how to best use ambiguous terms such as "relatively small". Finger length has been given by different author in different ways: from joint to tip, along adjacent surfaces or when pressed together. I herein refrain from referring to such publications expressly. In any case, the accuracy in measuring soft bodied animals is fairly low and comparisons of authors who are using different measurement methods is at best arbitrary. A Dutch terrarist stated to me that he, in measuring the legs of tiny moth caterpillars, achieved an accuracy on the order of 1% of total body length - that actually is no accuracy at all. Such caterpillars stay smaller than 1 cm, often reaching less than 5 mm. The use of sizes rounded to the nearest half millimeter is not accurate if it is pertaining to the finger discs of animals themselves reaching only 15 - 20mm. One tenth of a millimeter differences are rounded to the nearest half millimeter - how accurate is that?

Nevertheless, the seemingly more vague terminology of "clearly shorter than", or "nearly equal to" when used pertaining to finger length, can be used along with other characteristics. The objective finger length should be measured from the first separating joint to the finger tip whereas the positional finger length is best shown by pressing the fingers gently together. The width of finger discs and toepads is somewhat less arbitrary as compared to other



body parts because the tissue there is not very soft.

## discussion:

Silverstone states that "one cannot separate Dendrobatids into three discreet genera...", and that "any rigidly applied definition of more than one genus for Dendrobatid frogs could result in unnatural groups". In my opinion, the alternative is not to place all species in one single "unwieldy genus", but rather to refine ones insights into the real relationships and to describe new genera for more closely related groups so as to avoid polyphyletic lines being lumped together. Although I mostly consider myself a lumper, it is not possible to follow this tendency when considering taxa where enough differences are known to exist.

It seemed useful to mention my opinions together with the generic name in as much as a better consensus may be achieved from the encounter with divergent viewpoints. Clear standings on points of view facilitate future work. As Dart-Poison Frogs are so eagerly loved by terrarium keepers for their endearing daily habits and their brilliant colours, and as they are the subjects of much medicinal, pharmaceutical, and physiological research, I do think that as clear a view of the possible evolutionary relationships as can be achieved is important.

## appendix - 1989

In 1987 Myers proposed new generic names; the name *Minyobates* affects the groups I was concerned with here. *Minyobates* pertains to the *minutus* group without typical *Ranitomeya*. A reconsideration of defining characteristics is necessary.

*Ranitomeya* contains Dart-Poison Frogs of the subfamily *Dendrobatidae*, i.e. those with relatively short first finger, finger discs relatively broad and wider than toepads, in which the dorsal coloration often is red; those in which the tadpoles are fed with eggs, the oral disc of the tadpoles is fairly simple (with hardly any indication of an upper or lower lip).

Species enclosed fall into two complexes: 1. *reticulata/quinguevittata*



complex with species groups: 1. *reticulata* -group (*R. reticulata*, *R. fantastica*) and 2. *quinquevittata*-group (*R. quinquevittata*, *R. imitator*, *R. variabilis*); II *granulifera/pumilio/histrionica* -complex.

I predict that the karyotype of *R. reticulata* will be  $2N = 20$ . This fact being not yet published it is better to avoid nomenclatural changes and therefore I provisionally refrain from actually naming *pumilio* and *histrionica* herein.

As long as insufficient data is available, *Dendrobates vanzolinii*, *D. mystriosus* and *D. captivus* are not transferred to *Ranitomeya*. Mimicry is so tricky that insufficiently researched and understood species from Guyana and Amazonia cannot be placed with any surety.

LB

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## Classified Ads

**For Sale:** The arrival of spring will allow for the shipping of captive bred specimens produced over the winter (a large quantity). Several species will be offered, some quite rare. A Price list will be mailed in late March. All lists will be mailed on the same day and it will be "first come-first served". Those interested in receiving a price list should send a self addressed stamped envelope to:

Dale Bertram  
One Virginia Terrace  
Madison, Wisconsin  
U.S.A. 53705



## Crossbreeding - To Be, Or Not To Be? - Continued!

*In Volume II, number 4 (July, 1989) we published the opinions of several members regarding the question of the appropriateness, or lack thereof, of crossbreeding species of Dendrobatid frogs. We have encouraged the expression of these opinions so that the members might develop an awareness of a censuses on this issue, if any exists. Let me here reiterate that ISSD does not hold itself forth to be other than a sounding board for the opinions of its members. We do not attempt to suggest policy. What follows is another opinion on this issue. We welcome correspondence on this issue or any others which will be of general interest to society members.*

"I would like to comment on the section in the July 1989 Newsletter regarding hybridization.

In my opinion there is absolutely no valid reason to hybridize. I have been involved with breeding aquarium fish for a number of years and I have seen what indiscriminate hybridization has done to this hobby. Certain fish, notably the Discus fish (*Symphysodon* sp.) have been ruined by this practice, "All to create a new variety". The wild types are almost impossible to obtain. Today, I will not knowingly own a hybrid and if there is a chance that the fry I produce from any of my fish are the result of crossing, I discard them. I also raise carnivorous plants; this is another group where hybridization is common. Certain genera hybridize very easily,

and today it is often difficult to be sure you're getting a pure species or a hybrid which looks like it. I'll admit I own some of these hybrid plants because they were given to me, but I will not propagate them. I feel that it's too important to spend my time maintaining stocks of pure species. Like Dendrobate frogs, carnivorous plants live in specialized and delicate environments which are too easily destroyed by man's carelessness or greed. For this reason I feel that it's important to maintain genetically pure strains of all the species we can, to guard against future habitat destruction and the extinction of a species which lives within it. I would like to see the ISSD take more of a stand on this issue. But I understand the reasoning for not putting forward



such an opinion since people will continue to hybridize no matter what. I agree that good record keeping is vital and I feel that the guidelines in the newsletter should be followed closely".

Gordon Snelling

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## **Song of the Swamp**

**In the Okefenokee,  
a frog**

**Serenaded his love  
from a log**

**His basso profundo**

**Left her so stunned, O!**

**Now their tadpoles  
abound in the bog.**

Evelyn Paul  
Brookfield, Illinois

## **WANTED:**

Quotable quotes, cute little sayings, anecdotal anecdotes, funny things, humorous art, etc. etc. - all pertaining, of course, to our mutual obsessions - frogs (kickers). These things are needed as fillers for odd spaces in the layout of these pages. Send them to the newsletter editor. Nothing is too foolish to be printed - as we all know.



## **WANTED:**

Information pertaining to the successful procurement of a CITES permit from the French government for the collection of Dendrobatid frogs in French Guiana. Anyone who knows someone of influence within the French government or might, through some other creative means, be able to help with this effort please contact Erik Wevers and/or Dale Bertram.



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